

### **Patent Claims**

1. Method for increasing the bioavailability of nutrients in a test person, who desires such an increase, which constitutes the administration of a nutritionally active quantity of at least one nutritional supplement and a quantity of galactomannan and/or glucomannan increasing the bioavailability.
2. Method according to Claim 1, characterized in that HGH (origin somatotropin) is embedded in galactomannans and/or glucomannans.
3. Method according to Claims 1 and/or 2, characterized in that said nutritional material constitutes at least one material that has been selected from a group consisting of herbal extracts, water soluble vitamins, fat-soluble vitamins, amino acids, fatty acids, minerals and antioxidants and hormones.
4. Method according to one of the preceding claims, characterized in that said herbal extracts have been selected from a group consisting of ashwaganda, boswellin, capsaicin, curcumin, silymarin extract, sceletium and ayurvedic herbal extracts.
5. Method according to one of the preceding claims, characterized in that said water-soluble vitamins have been selected from a group consisting of vitamin B1, vitamin B2, Niacin, vitamin B6, vitamin B12, folic acid, inositol, pantothenic acid and vitamin C, whereby the fat-soluble vitamins have been selected from a group consisting of vitamin A, vitamin D, vitamin E and biotin.
6. Method according to one of the preceding claims, characterized in that said water-soluble vitamins have been selected from a group consisting of vitamin B1, vitamin B2, Niacin, vitamin

B6, vitamin B12, folic acid, inositol, pantothenic acid and vitamin C, whereby the fat-soluble vitamins have been selected from a group consisting of vitamin A, vitamin D, vitamin E and biotin.

7. Method according to one of the preceding claims, characterized in that said antioxidants have been selected from a group consisting of mixed carotenoids, the coenzyme Q10, lycopene, lutein, zeaxanthin, bioflavonoids, germanium, selenium, zinc, vitamin A, vitamin C and vitamin E, alpha lipoic acid, extract from green tea and extract from pine bark.

8. Method according to one of the preceding claims, characterized in that said amino acids have been selected from a group consisting of N-acetyl cysteine, acetyl L carnitine, L-arginine HCL, L-carnitine, endorphenyl D-phenylalanine, GABA, L-glutamine, L-glycin, L-histidine, L-lysine, L-methinine, L- and DL-phenylalanine, proline, taurine, 5-hydroxytryptophane, L-tyrosine.

9. Method according to one of the preceding claims, characterized in that said minerals have been selected from a group consisting of calcium, chromium, copper, germanium, iodine, iron, magnesium, manganese, calcium, selenium, silicon, vanadium, zinc.

10. Application of polysaccharides such as galactomannans, glucomannans and similar for introducing active substances into the human or animal metabolism, characterized in that the vital substances are embedded individually or as a complex separately and separate in function from each other in a plant-based matrix of the polysaccharide.

11. Application of polysaccharides such as galactomannans, glucomannans and similar for introducing active substances according to one or more of Claims 1 through 11, characterized in that the vital substances are embedded individually or as a complex separately and separate in function from each other in a plant-based matrix of the polysaccharide.

12. Application according to Claim 11 or 12, characterized in that the vital substances are vitamins, mineral substances, trace elements, plant ingredients, amino acids, coenzymes and other metabolic active substances.

13. Application according to one of Claims 11 through 13, characterized in that the active substance is dissolved in water or in the case of fat-soluble active substances; the active substance is suspended in water,

the solution or suspension is slowly introduced into the purified polysaccharide and blended,

the resulting gel is dried by means of a gentle method,

the cake resulting from the drying is ground and sifted to the desired particle size (preferably 0.2 – 2 mm).

14. Polysaccharide according to one of Claims 11 through 14, characterized in that a granule (1) consists of a multitude of granular particles 2, 3, a first active substance is embedded in a first granular particle and a second active substance is embedded in a second granular particle.

15. Polysaccharide according to Claim 15, characterized in that the two granular particles 2, 3 are completely separate in function and do not blend or come into interaction with one another in undesirable manner.

16. Polysaccharide according to one of Claims 11 through 16, characterized in that the granular particle (2, 3) is formed from a multitude of net-shaped or lattice-like polysaccharide molecules 5, which form a lattice structure 4 and that the active ions (7) are incorporated in the interstitial spaces (6) of this lattice structure (4) by means of a coordinate link to the lattice structure (4) of the polysaccharide molecules (5).

17. Polysaccharide according to one of Claims 11 through 17, characterized in that the polysaccharide molecules (5) are enclosed by an H<sub>2</sub>O shell which completely envelops and screens the linear structure.
18. Polysaccharide according to one of Claims 11 through 18, characterized in that OH groups are attached to the linear polysaccharide molecules (5) and that the active substance ions (7) are incorporated in the interstitial space (6) between the molecules (5) with a coordinate link.
19. Polysaccharide according to one of Claims 11 through 19, characterized in that when water or intestinal fluid penetrates into the interstitial spaces (6) of the molecules (5), said molecules shift towards one another two-dimensionally (in the direction of the arrows 10, 11).
20. Polysaccharide according to one of Claims 11 through 20, characterized in that the delayed release occurs as a result of the fact that the individual threads are carried through the penetrating water or the intestinal fluid in layers and with this the lattice structure is also carried away in layers, in order to in this way release the active substance ions (7) embedded in the interstitial space (6).
21. Polysaccharide according to one of Claims 11 through 21, characterized in that the linear molecules are enclosed by a hydrational shell (H<sub>2</sub>O shell 9).